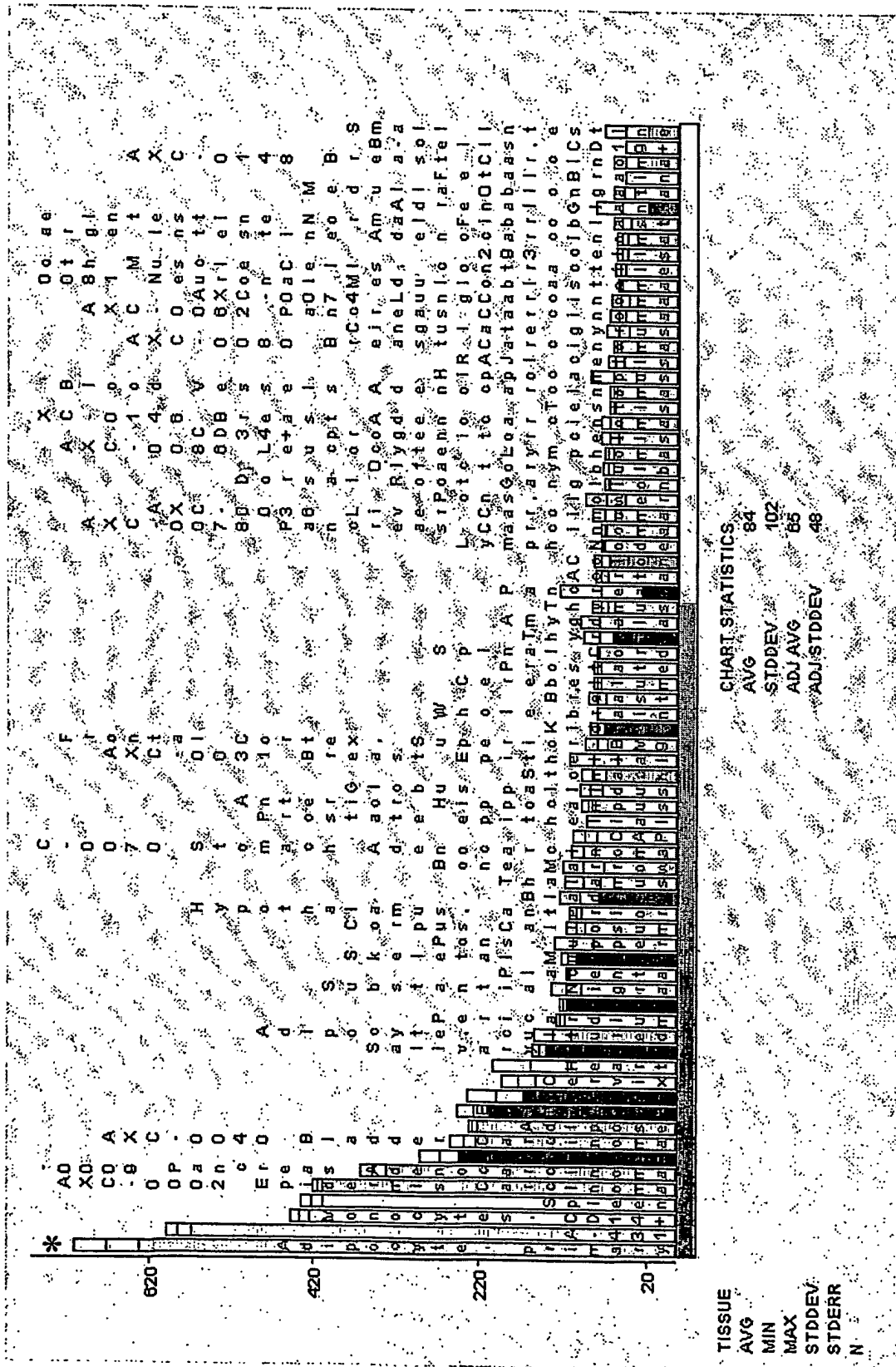


# Figure 1



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**Figure 2**  
**RUP25 G<sub>i</sub> - coupled constitutive activity in melanophore**

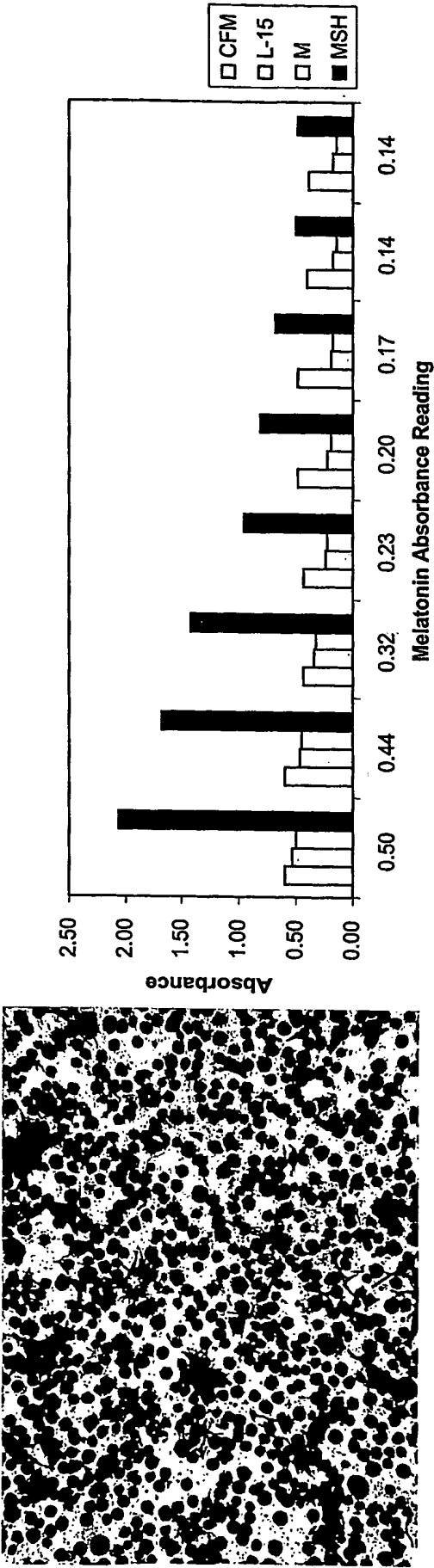


Figure 3A

Action of Nicotinic Acid at RUP25  
Expressing Melanophores

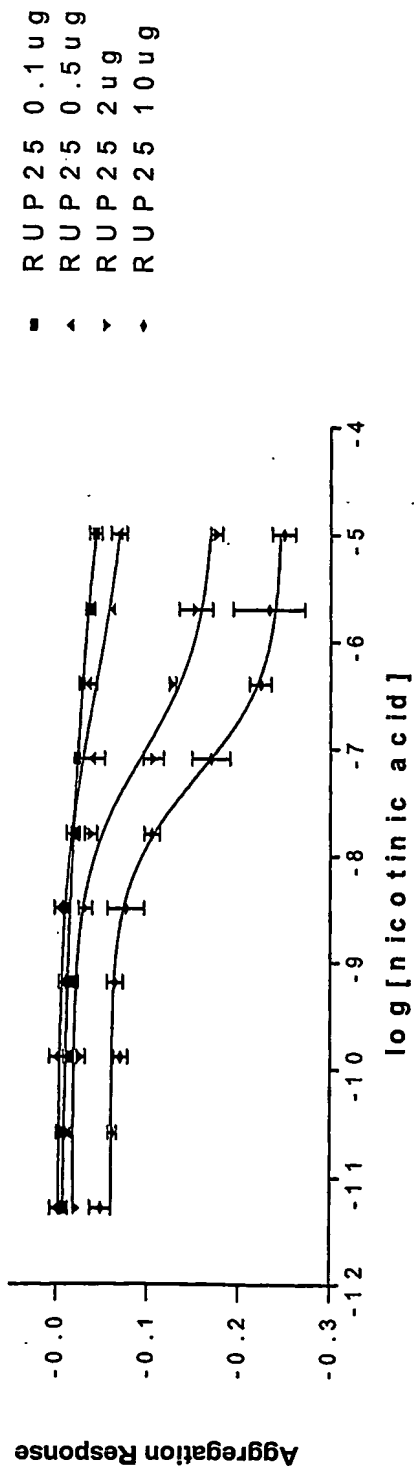
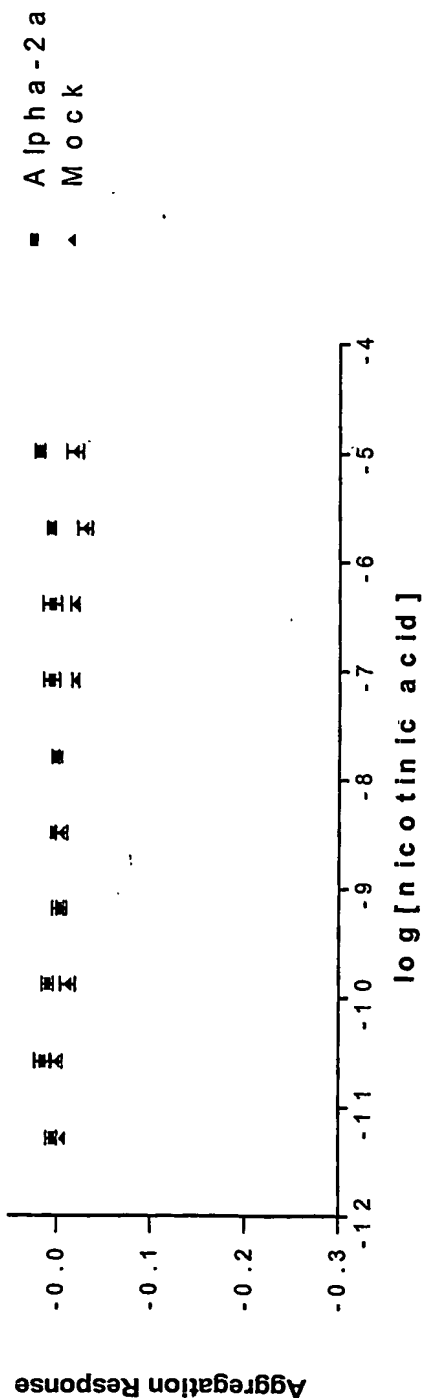
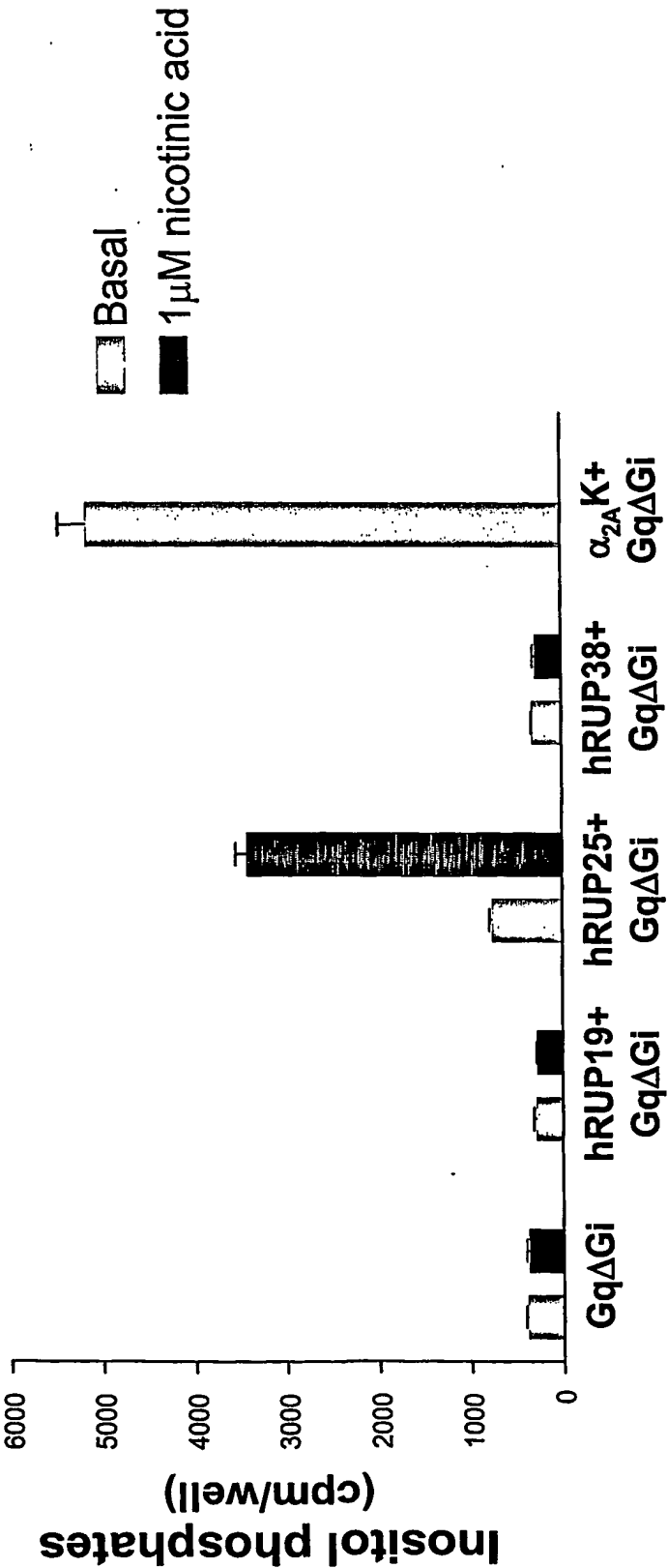


Figure 3B

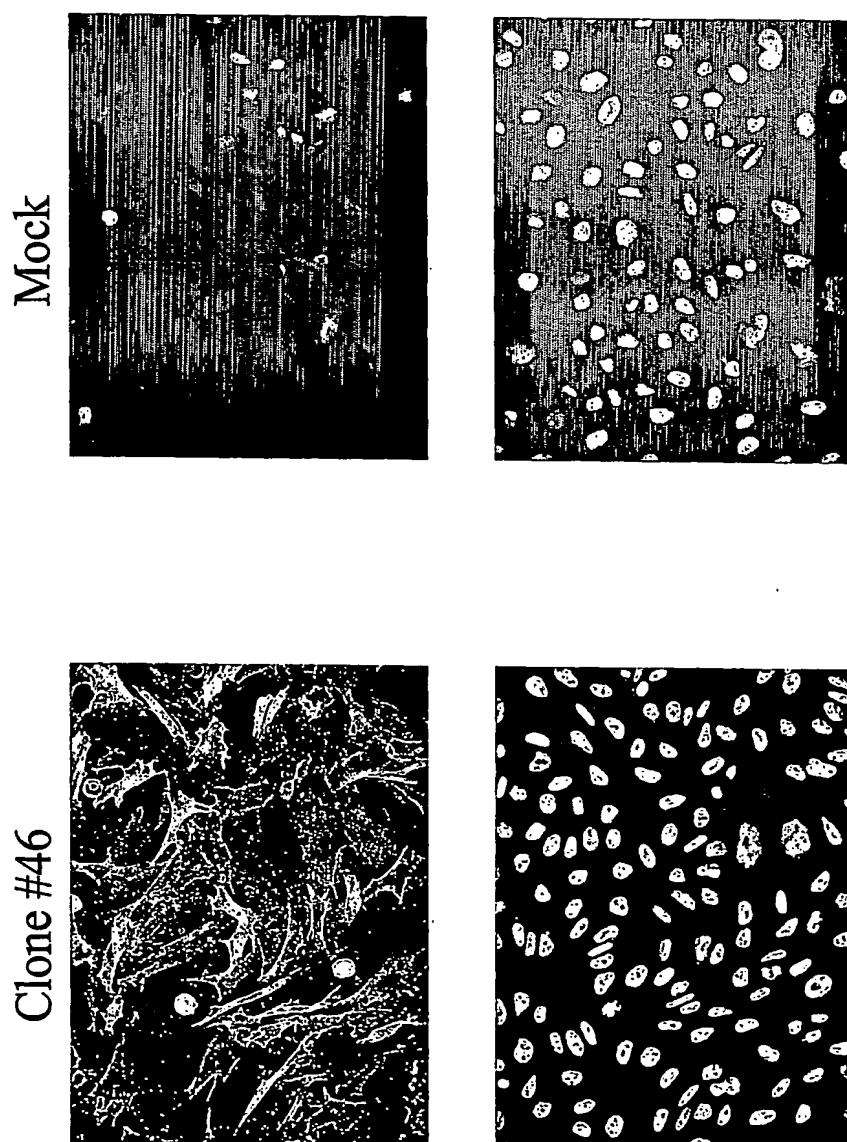
Nicotinic Acid Control Cells



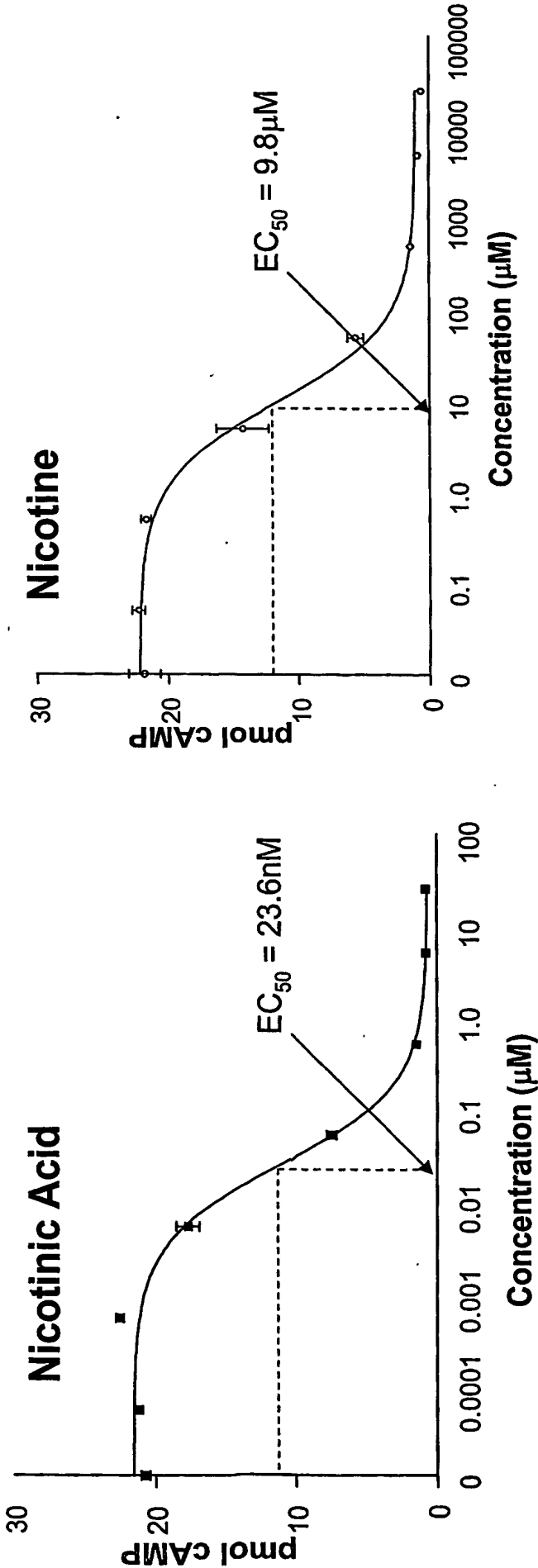
**Figure 4**  
**Nicotinic acid induced-IPs accumulation in 293 cells**  
**co-expressing hRUP25 and GqΔGi**



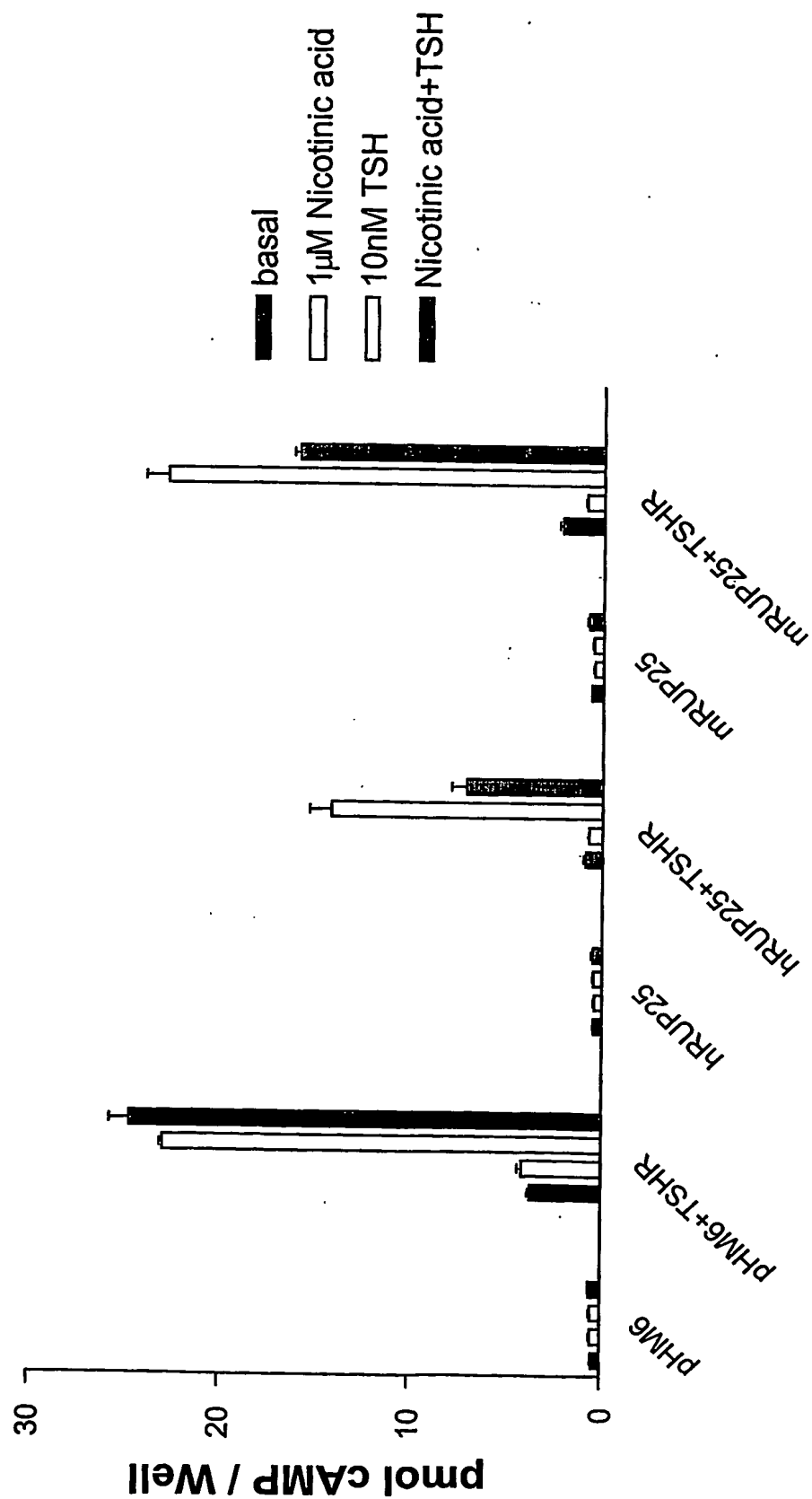
**Figure 5A**  
**hRUP25-CHO stable clone identified by anti-HA**  
**immunofluorescence staining**



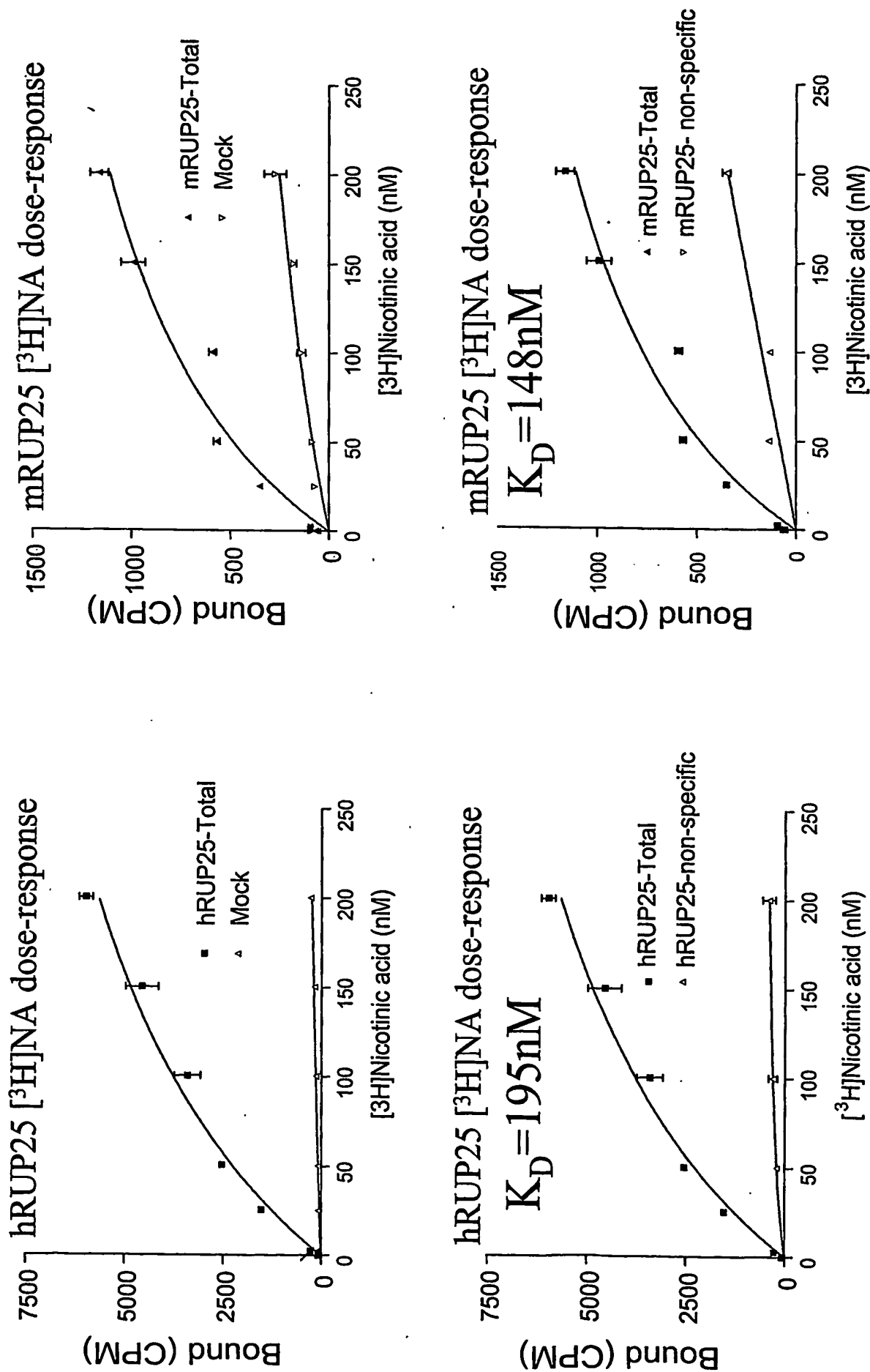
**Figure 5B**  
**Nicotinic acid and nicotine induced-inhibition of**  
**forskolin stimulated cAMP accumulation in hRUP25-**  
**CHO cell stable line #46**



**Figure 6**  
**hRUP25 and mRUP25 inhibit TSHR induced-cAMP accumulation following activation by nicotinic acid**



**Figure 7**  
**hRUP25 and mRUP25 bind to nicotinic acid**  
**specifically and with high affinity**





## Figure 8

the rank order of potency of compounds on hRUP25 closely matches that of the pharmacologically defined nicotinic acid receptor

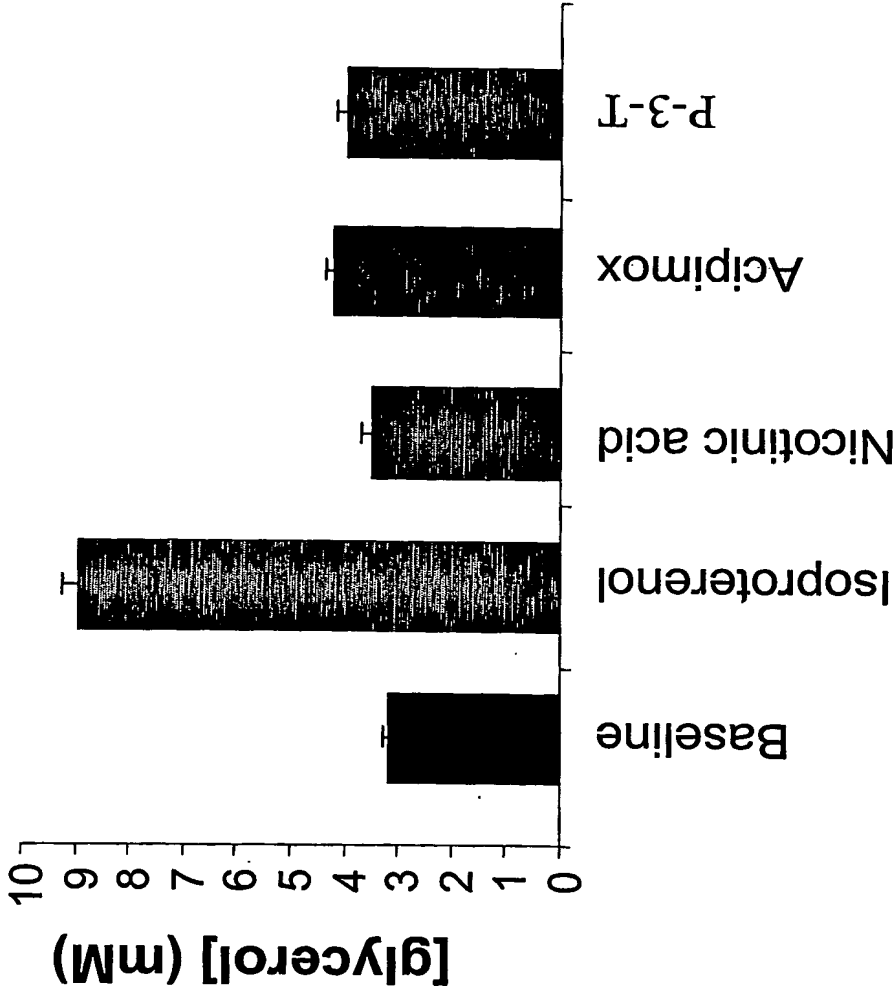
Compound	EC 50 ( $\mu M$ )		
	Adipocytes*	Spleen*	hRUP25†
Nicotinic acid	1.42	0.703	0.04
Pyridazine-4-carboxylic acid	3.76	3.14	N.D.
Acipimox	10.3	6.56	2
3-Pyridine-acetic acid	16.4	21.8	3
Pyrazine-2-carboxylic acid	26	22	4
5-Methylnicotinic acid	30.2	30.0	7
5-Methylpyrazine-2-carboxylic acid	52.0	14.5	7
6-Methylnicotinic acid	72.6	53.7	34
Nicotinic acid-1-oxide	80.4	73.7	120
2-Hydroxynicotinic acid	132	N.D.	130
Furane-3-carboxylic acid	142	N.D.	110
Nicotinamide	>1000	>1000	>1000
N.D., not determined.			128.2

\* From Lorenzen, A. et. al. *Mol. Pharmacol.* 59 (2):349-357, 2001.

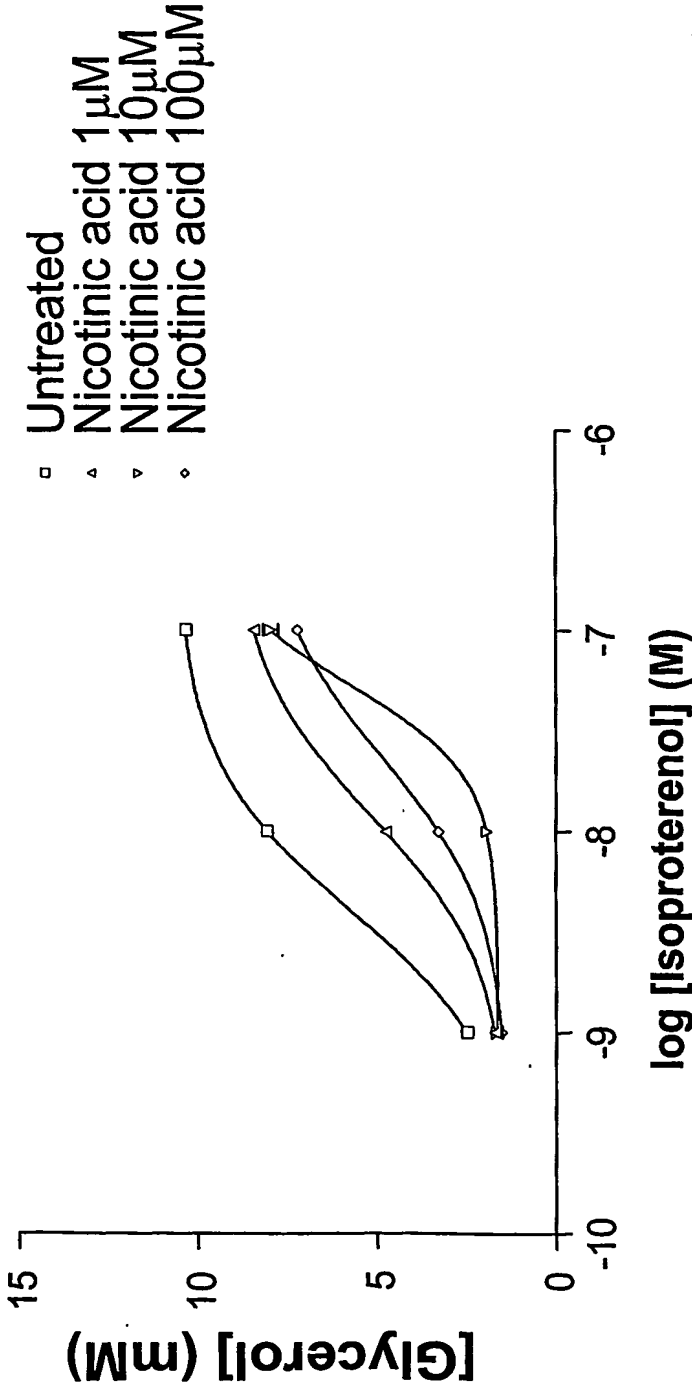
† Arena data, inhibition of forskolin-induced cAMP production in hRUP25-CHO stable line #46.

‡ Arena data, [ $^3H$ ]nicotinic acid radioligand binding assay on membranes derived from hRUP25-CHO stable line #46.

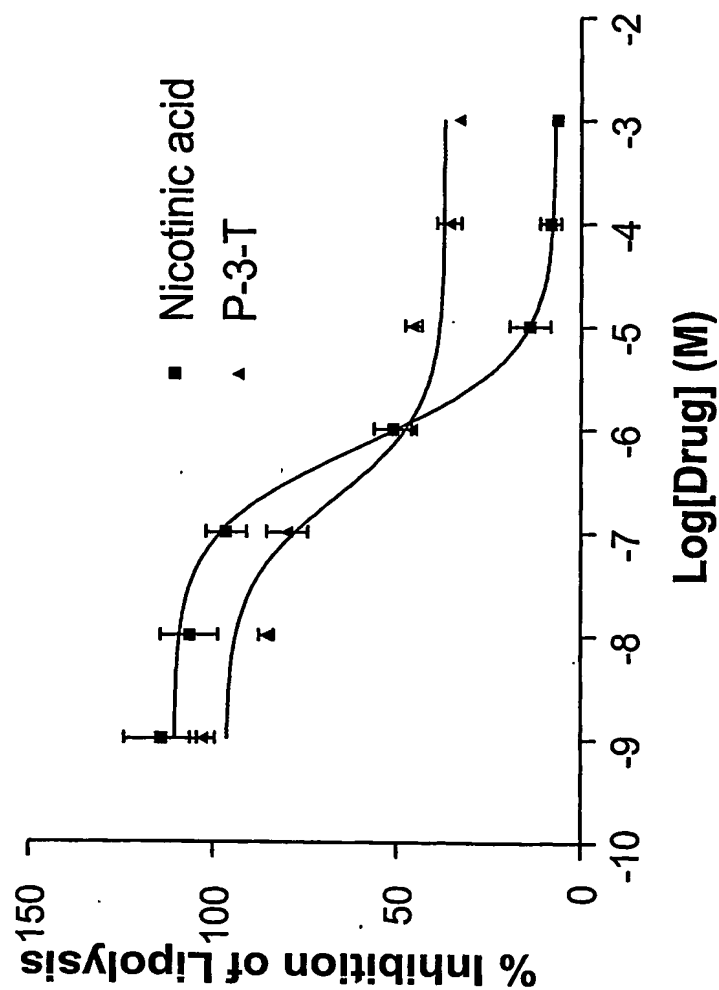
**Figure 9A**  
**Nicotinic acid and related compounds inhibit isoproterenol induced lipolysis in rat epididymal fat derived adipocytes**



**Figure 9B**  
**Nicotinic acid dose-dependent inhibition of isoproterenol induced-lipolysis in rat, epididymal fat derived adipocytes**



**Figure 10**  
**Dose-dependent inhibition of isoproterenol induced-lipolysis**  
**in human, subcutaneous-derived, primary adipocytes *via***  
**nicotinic acid and P-3-T**



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